CONCERTED ACTION
ENERGY EFFICIENCY
DIRECTIVE

Methods for the calculation of energy savings

Executive Summary 8.6

Obligation Schemes and Monitoring

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1 Summary

Although the EED provides a set of requirements on how to calculate savings under the framework of Article 7, Member States (MS) have significant flexibility in selecting the exact calculation methodology they will use, as long as requirements stipulated in Annex V have been taken into account.

Different approaches for the calculation of energy savings comprise:

- the choice of the basic methodology (deemed, metered, surveyed, scaled);
- the determination of baselines and the values used for efficient measures (whether the climatic variations have been applied and how the possible effects of free riders have been accounted for);
- how the lifetime of measures is taken into account.

MS' Article 7 notifications and NEEAPs[1] show that a wide variety of different measures will be used to comply with the requirements of Article 7. These measures include, among others, Energy Efficiency Obligations (EEOs) as well as subsidy schemes, energy taxes and standards and norms.

From the limited available information in MS' notifications and NEEAPs, it can be concluded that, although the other three approaches are also applied, deemed savings is the most frequently used approach to calculate energy savings for Article 7.

Discussions at past meetings of the CA EED showed that MS' approaches differ with regards to the determination of baselines, the values chosen for the energy efficiency measures and the provisions for taking into account the lifetime of measures.

These facts create challenges with regards to the comparability of MS' calculations of energy savings.

[1] National Energy Efficiency Action Plans

2 Recommendations/Conclusions

Examples of MS' calculation methodologies

In the course of the CA EED Plenary Meeting in October 2015, three Member States presented their approaches to the calculation of energy savings for Article 7.

The most important insights from these presentations are:

- As regards the basic calculation methodology, deemed and scaled savings are most frequently used based on the number of projects. The share of the different calculation methodologies in total savings can be different, because large projects are often evaluated using a metered savings approach.
- MS often restrict methodologies to certain cases, e.g. the calculation of savings in households can be restricted to the deemed savings approach.
- Discussions within the CA EED Plenary Meeting sessions in October 2015 indicated that MS identified similar solutions for the same issues.
- MS might have clearly defined rules for the calculation of energy savings; however, open issues remain regarding the control of measures.

More information on the presentations can be found in the "Practical Examples" section of this report.

Comparability of calculated energy savings?

Based on a concrete example of an energy efficiency measure and on predefined questions, CA EED participants were asked to discuss and compare calculation approaches applied in different MS.

Example
An existing 15 year old boiler in a household is replaced by a new boiler. The technical lifetime of a boiler is assumed to be 20 years. Thus the boiler has been replaced before the end of its technical lifetime.

Questions to answer	Discussion results
What basic method would you use to calculate energy savings? deemed savings | metered savings | scaled savings | surveyed savings | other	The majority of paricpants would calculate energy savings of this measure with the deemed savings approach. Some participants would choose scaled savings. One proposal included a suggestion to select the approach depending on the number of boilers replaced: For a single boiler one could use deemed savings; for a multitude of boilers the scaled savings approach.
How would you set the baseline? legal minimum requirements | efficiency of the old boiler | market average | other	The baselines most frequently chosen are "legal minimum requirements" and "efficiency of the old boiler". Only one participant chose "market average". Two additional participants would use "existing boilers average based on modelling" which would represent the average of the stock.
Lifetime of savings 20 years | 5 years | other	Many differences occured with the lifetime of savings. Many participants would choose "20 years", thus accounting for the full lifetime of the new boiler. Other suggestions of the lifetime lie between 10 and 15 years.
Quality requirements for the new boiler? yes | no	Most participants would require quality criteria for the new boiler. This holds especially in the case of financial programmes/schemes.

In summary, the interpretations of MS in relation to this basic example of an energy efficiency measure show that different approaches prevail in MS concerning the calculation and determination of energy savings. There is little disagreement on the basic methodology (deemed savings); however, our discussions revealed a more diverse situation with regards to setting baselines and determining the lifetime of measures. The exercise provided participants with valuable insights on alternative approaches followed in other MS.

3 Practical Examples

During the CA EED Plenary Meeting in October 2015, Luxembourg, Italy and France presented Member State examples on the applied methodologies for the calculation of energy savings under the framework of Article 7.

Luxembourg

Luxembourg recently implemented an Energy Efficiency Obligation scheme. The obligated parties are electricity (28) and gas suppliers (9). Energy savings can be claimed in principle in all sectors with the exception of the transport sector. Obligated parties must mention the type of action undertaken with regard to the end customer, and must confirm that this took place before the implementation of the measure that led to the energy savings. In order to reduce the complexity of the scheme:

- the calculation methods used are restricted to deemed savings and scaled savings;
- a catalogue with standardised calculations is published; and
- an Excel tool to calculate savings from measures is provided to obligated parties.

The basic rule with regards to determining the baseline is as follows: for an exchange of an existing appliance or application, the situation before the measure can be used as the baseline; for a new appliance or application, the baseline is set by the minimum legal requirements.

More detail is available in the presentation on the CA EED website http://www.ca-eed.eu/themes/obligation-schemes-and-monitoring-ct8 (>Energy efficiency obligation mechanism - Luxembourg and >Energy Efficiency Obligation Scheme - Calculations – Luxembourg).

Italy

Italy implements Article 7 with a combination of a White Certificates Trading System (WCTS), a tax deduction scheme and a scheme called thermal account. The standard methodology for the WCTS is deemed savings. The two other methodologies allowed are analytical (=scaled) and ex-post (=metered). For the tax deduction scheme, deemed and scaled savings are used. The thermal account scheme is evaluated with deemed and metered savings. For the deemed savings approach, a catalogue of 28 measures is available.

More detail is available in the presentation on the CA EED website http://www.ca-eed.eu/themes/obligation-schemes-and-monitoring-ct8 (>Monitoring Energy Efficiency - Italy).

France

The main scheme in France to comply with Article 7 is the White Certificates Trading System. The scheme differentiates between standard measures for which deemed savings or ex-ante calculations are applied and non-standard measures for which deemed, scaled or metered savings are allowed, but have to be proved in the course of an energy audit. The standard measures are published in factsheets and are developed by expert groups that cover certain sectors and sub-sectors.

More detail is available in the presentation on the CA EED website http://www.ca-eed.eu/themes/obligation-schemes-and-monitoring-ct8 (>Methods for the calculation of energy savings - France).

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Legal Disclaimer

The Concerted Action for the Energy Efficiency Directive (CA EED) was launched by Intelligent Energy Europe (IEE) in spring 2013 to provide a structured framework for the exchange of information between the 29 Member States during their implementation of the Energy Efficiency Directive (EED).

For further information please visit **www.ca-eed.eu** or contact the CA EED Coordinator Lucinda Maclagan at **lucinda.maclagan@rvo.nl**

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